

For discussion on  
26 May 2008

## **Legislative Council Panel on Environmental Affairs**

### **Public Consultation on Mandatory Implementation of Building Energy Codes**

#### **PURPOSE**

This paper reports on the results of the consultation exercise of the proposed mandatory implementation of Building Energy Codes (BEC) promulgated by the Electrical and Mechanical Services Department (EMSD).

#### **BACKGROUND**

2. On 28 December 2007, the Government launched a three-month public consultation on a proposal to introduce mandatory implementation of the BEC for certain new and existing buildings, with an aim of improving energy efficiency of buildings, alleviating global warming and combating air pollution. The consultation document sets out the Administration's proposals on the mandatory implementation of the scheme as follows –

- (a) new commercial buildings and the communal areas of new residential and industrial buildings in both the private and public sectors as well as major retro-fitting works in existing buildings should comply with the BEC. The list of buildings with Certificates of Compliance issued will be made available for public inspection;
- (b) to enhance energy efficiency, energy audits are required for certain buildings once every 10 years. The results of the audits will be made available to occupants; and
- (c) to complement the proposed legislative scheme, buildings that have exceeded the minimum building energy efficiency standards by a prescribed percentage will be recognised by an energy mark through a voluntary administrative scheme.

3. It is estimated that for new buildings, the implementation of the proposals will result in energy saving of 2.8 billion kWh in the first decade, which contributes to a reduction in carbon dioxide emission of 1.96 million tonnes. An additional capital outlay in the region of 3%-5% of the building construction cost may have to be incurred in return for about 10% to 15% annual saving in energy bills. On average, the payback period for the additional capital investment is six years.

4. As part of the public consultation exercise, the Legislative Council Panel on Environmental Affairs was consulted on the proposal on 28 January 2008 (LC Paper No. CB(1) 504/07-08(01)).

## **PUBLIC CONSULTATION**

5. During the three month consultation period, we arranged consultation meetings with the Legislative Council Panel on Environmental Affairs, Advisory Council on the Environment, Energy Efficiency and Conservation Subcommittee of Energy Advisory Committee, District Councils, professional bodies and other stakeholders to solicit their views on the proposed scheme. Dedicated website, email and fax for written submissions were set up. A list of meetings, consultation sessions and public forum is at **Annex A**.

6. To facilitate the public to express their views, a standard form of questionnaire inviting comments on key areas of the consultation was attached to the consultation document. We have also arranged a public forum on 28 February 2008 to solicit public views.

7. A total of 20 forums, workshops and meeting sessions were held during the public consultation period with a total of about 900 participants. At the end of the consultation period, we received a total of 124 written submissions from the general public, academia, professional bodies, trade associations, green groups and other stakeholders.

8. The Energy Efficiency & Conservation Subcommittee of the Energy Advisory Committee and the Advisory Council on the Environment were consulted on 18 January and 14 February 2008 respectively and supported the

proposals.

9. The vast majority of the views received supported the implementation of the proposed mandatory implementation of the BEC and the inclusion of existing buildings in the proposed mandatory scheme. The majority of the views received agreed that the Government's proposal is in the right direction for promoting energy efficiency and conservation in buildings. Some submissions offered specific comments on the implementation details of the mandatory scheme. A summary of the views received during the consultation period is at **Annex B**.

## **WAY FORWARD**

10. Given the general support received from the public and various stakeholders, we are now preparing the legislative proposal for a mandatory implementation of the BEC, taking into account the comments received. Based on the majority of views received, we propose that -

- (a) the mandatory implementation of the BEC should be pursued with a view to improving energy efficiency and conservation in buildings;
- (b) new commercial buildings and communal areas of residential and industrial buildings should be included in the proposed mandatory scheme. Developers should be required to submit self-declarations to the Director of Electrical and Mechanical Services Department (DEMS). DEMS would issue Certificates of Compliance upon receipt of the required information and document. Building owners are required to apply for renewal of the Certificates once every 10 years;
- (c) government buildings and buildings in the public sector should also be included in the proposed mandatory scheme. Also, consideration should be given to the inclusion of other buildings such as major educational buildings;
- (d) existing buildings should be required to improve energy efficiency whenever there are major retrofitting works. Existing owners should be required to arrange certification of the building services installations.

Consideration should be given to allow suitable transitional arrangements for existing buildings to comply;

- (e) the carrying out of energy audits once every 10 years for commercial buildings and the display of the audit results should be made mandatory. Proper phasing should be considered for the carrying out of first energy audits for existing buildings to smooth out the implementation;
- (f) the self-declarations and energy audits should be certified by recognized professionals. DEMS will set up a register of recognized professionals under the proposed legislation;
- (g) DEMS will issue codes of practices on the energy efficiency standards and requirements and on energy audits;
- (h) the recently updated BEC for Hong Kong Energy Efficiency Registration Scheme for Buildings should be adopted as the current energy efficiency standards and requirements. There should be a regular update of the energy efficiency standards and requirements;
- (i) there should be a penalty system with clear responsibility at different stages of the building development, and with sufficient deterrent effect;
- (j) a tiered arrangement should be adopted whereby the BECs issued by DEMS should be the minimum standards applicable to all buildings covered by the proposed legislation, and a higher set of standards should be introduced to give recognition, on a voluntary basis, to buildings that can achieve better energy efficiency so as to encourage superior environmental performance; and
- (k) public education and partnership on energy saving in buildings should be strengthened.

11. We aim to introduce the legislation into the Legislative Council in 2009. In the meantime, we will continue to promote the application of the BEC to buildings, raise the public awareness on the importance of energy saving in buildings, and work with professional bodies to promote good practices on building energy efficiency and conservation in Hong Kong.

## **ADVICE SOUGHT**

12. Members are invited to note the outcome of the public consultation.

**Environment Bureau**  
**May 2008**

**List of Consultation Sessions, Seminars and Public Forums Attended  
During the Consultation Period**

(By Chronological Order)

No.	Date	Events
1.	15 January 2008	Meeting with Building Energy Codes Taskforce
2.	18 January 2008	Meeting with Energy Efficiency and Conservation Subcommittee of the Energy Advisory Committee
3.	22 January 2008	Discussion Forum with professionals, contractors and suppliers in the building services and electrical and mechanical trades
4.	24 January 2008	Meeting with green groups
5.	28 January 2008	Meeting with Legislative Council Environmental Affairs Panel
6.	5 February 2008	Meeting with Business Environment Council and HK-BEAM Society
7.	14 February 2008	Meeting with Advisory Council on the Environment
8.	19 February 2008	Meeting with the Planning, Environment and Lands Subcommittee and Construction Subcommittee of the Real Estate Developers Association of Hong Kong
9.	21 February 2008	Meeting with Chairmen and Vice-Chairmen of District Councils
10.	26 February 2008	Seminar organized by the Hong Kong Association of Energy Engineers
11.	27 February 2008	Seminar organized by Chartered Institution of Building Services Engineers, Hong Kong Institution of Engineers and American Society of Heating, Refrigerating and Air-conditioning Engineers
12.	28 February 2008	Public Forum at City University of Hong Kong
13.	3 March 2008	Seminar organized by the Hong Kong Air-conditioning & Refrigeration Association

		Limited
14.	12 March 2008	Luncheon organized by the Hong Kong Institute of Real Estate Administrators
15.	13 March 2008	Seminar organized by World Wide Fund and Climate Change Business Forum of Business Environment Council
16.	15 March 2008	Meeting with Tai Po District Council Environment, Housing and Works Committee
17.	18 March 2008	Meeting with the British Chamber of Commerce
18.	19 March 2008	Seminar organized by the Association of Engineering Professionals in Society Limited
19.	20 March 2008	Meeting with Yau Tsim Mong District Council Housing and Building Management Committee
20.	25 March 2008	Seminar organized by Central & Western District Council members Stephen Chan Chit-kwai, Sidney Lee Chi-hang and Jackie Cheung Yick-hung

## **SUMMARY OF WRITTEN SUBMISSIONS**

We have carefully examined the 124 written submissions received and views collected during the public consultation. Major comments on the six questions listed out in the public consultation document and the proposed mandatory implementation of the BEC received during the public consultation period are summarized as follows:

### **Question 1: Do you agree that Hong Kong should pursue the mandatory implementation of the Building Energy Codes?**

- 107 submissions expressed support for the mandatory implementation of the BEC and agreed that the scheme was in the right direction for achieving the efficient use of energy in buildings.
- While 12 submissions did not explicitly indicate their overall views on the proposal, most of them offered specific comments on the smooth implementation of the mandatory scheme.
- Three submissions disagreed with the mandatory scheme and one commented that public consultation should not be conducted.

### **Question 2: What broad categories of buildings should be covered?**

- On the three categories of buildings proposed to be included in the mandatory scheme (i.e. commercial buildings, communal areas of residential and industrial buildings), 84, 61 and 57 submissions considered that commercial buildings, communal areas of residential and industrial buildings should be included in the mandatory scheme respectively.
- 26 submissions considered that government buildings and buildings in the public sector should be included in the mandatory scheme (e.g. schools, hospitals).
- Four submissions suggested that transport facilities, such as carparks and railway stations should be included in the mandatory scheme.



- 32 submissions suggested that all buildings should be included in the mandatory scheme, while two submissions considered that buildings with high electricity consumption should be included in the mandatory scheme.
- Five submissions commented that hotels should be included in the mandatory scheme.

**Question 3: Are there any specific types of functional use within the selected categories that should be exempted from the mandatory scheme?**

- Out of the 97 submissions that expressed views on this issue, 51 submissions considered that exemptions should be provided, while the remaining 46 submissions considered no exemptions should be provided in order to capture the maximum environmental benefits.
- 27 submissions considered that buildings with site constraint or special usage (e.g. hospitals, elderly homes, electricity supply, medical and security facilities) should be exempted.
- 11 submissions considered that buildings with functional uses overriding the importance of energy efficiency, such as buildings for industrial processing, should be exempted.
- Six submissions considered that buildings with heritage value, such as declared monuments should be exempted.
- Five submissions considered that buildings over certain years of occupation or with demolition plan should be exempted.
- Three submissions considered decorative lighting should be exempted.
- Four submissions considered that residential dwellings should be exempted.
- Two submissions considered that buildings with a bare minimum use of energy should be exempted.

- Two submissions considered certain specific types of lifts should be exempted.
- Instead of exempting specific types of functional uses from the mandatory scheme, two submissions considered that different standards should be set for different uses.
- Three submissions considered the exemption should be strictly limited and only be approved with sufficient proof to demonstrate that compliance with the BEC was not feasible.

**Question 4: Do you consider existing buildings should also be required to improve their energy efficiency performance?**

- 108 submissions expressed views on this issue. 97 submissions considered that existing buildings should also be required to improve their energy efficiency performance, while six submissions held the opposite view.
- Two submissions considered that regulation on existing buildings should be based on the year of occupation.
- One submission considered that only existing commercial buildings should be required to improve their energy efficiency performance.

**Question 5: If answer to Question 4 is affirmative, which of the following options do you consider as most appropriate?**

- (a) requiring compliance with the BECs after a reasonable transitional period; or**
  - (b) requiring compliance with the BECs only when there are major refurbishment works, such as when the works involve replacement of major components of the types of installations covered by the BECs or when the coverage of the retro-fitting works exceeds a certain percentage of the building's gross floor area ; or**
  - (c) mandating conduct of energy audits and display of the audit results.**
  - (d) any other options?**
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- 56 submissions considered that compliance with the BEC should be required after a transitional period. Five submissions suggested specific transitional period for compliance, while another suggested that flexibility should be provided to building owners in the timing for carrying out improvement works.
  - 52 submissions considered that compliance with the BEC should be required when there were major retro-fitting works.
  - 40 submissions considered that energy audits and display of the energy audits should be made mandatory. Instead of carrying out energy audits once every 10 years, four submissions considered that the intervals should be reduced to five years while another considered that energy audits should be carried out once every three to five years.
  - Seven submissions agreed that energy audits should be carried out by professionals, and two submissions suggested having well-defined standards for energy audits.
  - As for the scope of energy audits, four submissions considered that more clear requirements should be included in the future legislation to prevent ambiguities and loopholes.

- One submission considered that energy audits should not be mandatory.

**Question 6: As a general direction, whether we should –**

- (a) **adopt the recently updated BEC for the Hong Kong Energy Efficiency Registration Scheme for Buildings as the mandatory standards;**
  - (b) **incorporate a regular review system to uplift the standards with reference to the prevailing international standards as far as possible; or**
  - (c) **introduce a tiered arrangement, i.e. with the BEC issued by the Electrical and Mechanical Services Department as the minimum standards applicable to all covered buildings, and a higher set of standards be introduced to give recognition to buildings that achieve better energy efficiency to encourage superior environmental performance.**
- 39 submissions agreed to use the current BEC as the standard. Eight submissions considered that the current BEC standards should be further tightened to keep abreast with higher international standards.
  - 59 submissions supported a regular review of the BEC to uplift the standards with reference to the prevailing international standards. Instead of a 5-year review proposed in the consultation document, three submissions suggested that the review should be carried out more frequently.
  - 67 submissions agreed to adopt a tiered system to encourage buildings achieve better energy efficiency performance. Four submissions considered that the requirements for the tiered system should be clearly laid down, while another considered that a tiered system might create double-standards.

## **Other Comments**

### **A. Financial and technical support**

- 24 submissions considered that the Government should provide

financial incentives, such as grant, loan, tax exemptions or rebate to assist building owners, in particular owners of existing buildings.

- Two submissions considered that the Government should provide technical support to the relevant industry and to facilitate researches. Two submissions considered that the Government should organize trainings and seminars for the professionals.

## **B. Public education**

- Four submissions considered that the Government should strengthen public education, in particular to other energy saving measures apart from building services installations.

## **C. Compliance procedures**

- 12 submissions considered the proposed 2-month period to submit final self-declarations for new buildings too short. On the specific timing of submission, one submission suggested to extend the period to 3 months, four submissions suggested to extend to 6 months, one submission suggested to extend to 9 months, one submission suggested to require self-declaration be submitted after completion of the relevant installation, and one submission suggested to have the 2<sup>nd</sup> self-declaration submitted any time before completion of a building.
- On whether the compliance with the BEC should link with the issuance of occupation permit, one submission suggested that the submission of self-declaration should link to the issuance of occupation permits, while another two submissions considered that the compliance of BEC should not delay the issuance of occupation permits.
- One submission considered that partial compliance with BEC should be allowed subject to proof of technical reasons and need.

## **D. Responsibility of compliance**

- One submission considered that the responsibility of compliance

should be clearly defined according to their role and level of control at different stages. Two submissions considered that responsibility should lie with the “occupant” who would be responsible for operating the building services installation instead of property management companies and developers. One submission considered that property management companies should not be held liable for failing to comply with the requirements under the mandatory scheme.

#### **E. Implementation**

- 14 submissions suggested implementing the mandatory scheme by phases, of which nine submissions provided suggestions on the phase-approach, including priority given to government/new/commercial buildings, and the use of year of occupation to determine the phasing.

#### **F. Enforcement and penalty**

- Ten submissions considered that a clear penalty system should be in place with details of penalties being stipulated. One submission suggested removing the “energy mark” and the rate and rents exemption awarded to a building as penalties.
- One submission considered that sufficient manpower should be in place to ensure effective enforcement.
- One submission suggested providing a defence to customers who relied on the information provided by the manufacturers.

#### **G. Recognized professionals**

- Five submissions supported the use of recognized professionals in certifying the submissions made under the mandatory scheme. Three submissions considered that the Government should ensure sufficient qualified recognized professionals were available to facilitate the implementation of the mandatory scheme.
- Concerning the scope of recognized professionals, five submissions

considered that recognized registered professionals should not only be limited to the disciplines of engineers proposed in the consultation document (i.e. Registered Professional Engineers of the electrical, mechanical or building services engineering discipline registered by the Engineers Registration Board of Hong Kong). One submission considered the same qualification requirement under the voluntary scheme should be adopted.

## **H. Benchmark system**

- Six submissions considered that a benchmark system should be in place and standards should be published. Three submissions considered that buildings below a certain level of the benchmark system should be required to carry out improvement works.
- Six submissions suggested a labelling system on the energy efficiency performance of building services installations or buildings, while three submissions suggested a display requirement of information relating to buildings' energy performance.

## **I. Transitional arrangements**

- Five submissions suggested that a transitional arrangement should be in place. Of the four submission which indicated a suggestion on the length of the transitional period, one submission suggested a 12-month transitional period, two submissions suggested a 3-year transitional period and one submission suggested a 5-year transitional period for existing buildings.
- One submission suggested a 2-year grace period for owners to carry out energy audit, and a further grace period for them to carry out improvement works.

## **J. Other energy saving measures**

- Apart from compliance of BEC, two submissions considered that a holistic approach would be required to evaluate the environmental performance of a building, which covered the architectural

configuration, building insulation and design. Four submissions suggested updating the Overall Thermal Transfer Value and expanding its scope currently stipulated in the Building (Energy Efficiency) Regulation (Cap. 123M).

- Six submissions considered that application of renewable energy should be promoted, such as requiring a certain percentage of a new building's energy consumption to be generated by renewable energy sources.
- 15 submissions suggested adopting other energy saving measures, including banning of energy inefficient products, promoting good housekeeping measures and use of green rooftop.
- Six submissions suggested that recognition should be made to other recognized assessment systems, such as the HK-BEAM, while one submission considered that the criteria of HK-BEAM were not transparent enough.
- For government and public projects, two submissions considered that that the administrative procedures for compliance should be simplified or exempted.
- Six submissions considered that signboard lighting and other lighting for displays and advertisements should also be regulated.
- Two submissions considered that energy intensity achievements and target should be published.